



REMARKS

This Preliminary Amendment is submitted to improve the form of the specification as originally-filed.

It is respectfully requested that this Preliminary Amendment be entered in the above-referenced application.

If any further fees are required in connection with the filing of this Preliminary Amendment, please charge same to our Deposit Account No. 19-3935.

Respectfully submitted,

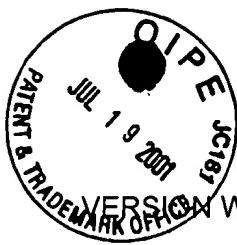
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please REPLACE the specification with the substitute specification attached hereto.

IN THE CLAIMS

Please DELETE claims 1-8 without prejudice or disclaimer.

Please ADD claims 9-16:

9. (NEW) A call service system comprising:

at least one client terminal through which a user can make an inquiry, said client terminal being any one of a telephone and a computer which can access homepages or send or receive emails;

at least one operator terminal through which an operator receives the inquiry from the user and answers the inquiry; and

a server connected to said client terminal and said operator terminal,

said client terminal including,

a user interface with which the user can select a type of a communication media to be used when receiving the answer from the operator; and

a transmission unit which transmits the information related to the communication media selected by the user, contents of the inquiry, and information related to the user to said server, and

said server including,

a queue-managing unit which queue-manages inquiries in which the user has either selected a telephone call as the type of communication media or made the inquiry over a telephone in a unified manner; and

a processing unit which successively processes the inquiries in the queue on said operator terminal.

10. (NEW) The call service system according to claim 1, wherein

said queue-managing unit manages a first queue including a waiting matrix for inquiries in which telephone has been selected as the type of communication media and a second queue including the inquiries made over a telephone, and

said processing unit allocates the inquiries in the second queue to said operator terminal, and when there is no entry in the second queue for a predetermined time, successively allocates the inquiries in the first queue to said operator terminal.

11. (NEW) The call service system according to claim 1, wherein  
said queue-managing unit manages the inquiries in which the user has either selected a  
telephone call as the type of communication media or made the inquiry over a telephone in one  
queue, and  
said processing unit successively allocates the inquiries in the queue to said operator  
terminal in accordance with a predetermined rule.

12. (NEW) The call service system according to claim 1, wherein  
said queue managing unit queue-manages a demand for notification received from a  
plurality of said operator terminals for simultaneously notifying a plurality of users of information  
items, inquiries in which a telephone call is selected as the type of communication media, and  
inquiries received over a telephone, in a unified manner.

13. (NEW) The call service system according to claim 1, wherein  
said user interface comprises a homepage inquiry screen that is provided with at least  
an input frame for allowing a selection among a retrieval of knowledge data base, an inquiry  
through an electronic mail and an inquiry through telephone, an input frame used for inputting  
information related to the user and an input frame in which the contents of an inquiry are input.

14. (NEW) A call service method of receiving an inquiry from a client terminal of a  
user, giving an answer to the inquiry through at least one operator terminal, said client terminal  
being any one of a telephone and a computer which can access homepages or send or receive  
emails, the method comprising the steps of:

a user selecting a type of communication media to be used when receiving the answer  
from said operator terminal, the selection being performed on a user interface of said client  
terminal;

said client terminal of the user transmitting information related to the type of  
communication media selected by the user, the contents of the inquiry and information related  
to the user to a server;

said server queue-managing the inquiries in which a telephone call has been selected  
as the type of communication media and the inquiries received in the form of a telephone call in  
a unified manner; and

said server providing a control to successively process the inquiries in the queue on said

operator terminal.

15. (NEW) A computer-readable recording medium that stores a computer program which when executed on a computer realizes a method of receiving an inquiry from a client terminal of a user, giving an answer to the inquiry through at least one operator terminal, said client terminal being any one of a telephone and a computer which can access homepages or send or receive emails, the computer program making the computer realize the steps of:

displaying a user interface on said client terminal of the user for selecting a type of communication media to be used when receiving the answer from said operator terminal;

said client terminal of the user transmitting information related to the type of communication media selected by the user, the contents of the inquiry and information related to the user to a server;

said server queue-managing the inquiries in which a telephone call has been selected as the type of communication media and the inquiries received in the form of a telephone call in a unified manner; and

said server providing a control to successively process the inquiries in the queue on said operator terminal.

16. (NEW) A computer program which when executed on a computer realizes a method of receiving an inquiry from a client terminal of a user, giving an answer to the inquiry through at least one operator terminal, said client terminal being any one of a telephone and a computer which can access homepages or send or receive emails, the computer program making the computer realize the steps of:

displaying a user interface on said client terminal of the user for selecting a type of communication media to be used when receiving the answer from said operator terminal;

said client terminal of the user transmitting information related to the type of communication media selected by the user, the contents of the inquiry and information related to the user to a server;

said server queue-managing the inquiries in which a telephone call has been selected as the type of communication media and the inquiries received in the form of a telephone call in a unified manner; and

said server providing a control to successively process the inquiries in the queue on said operator terminal.



#6

Docket No.: 1341.1092

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

Hiroko SHIMIZU, et al.

Serial No. 09/842,894

Group Art Unit:

Confirmation No. 7590

Filed: April 27, 2001

Examiner:

For: METHOD OF AND SYSTEM FOR CALL SERVICE SYSTEM, AND COMPUTER  
PRODUCT (AS AMENDED)

**ATTACHMENT B**  
**AMENDED SPECIFICATION**

METHOD OF AND SYSTEM FOR CALL SERVICE SYSTEM, CALL SERVICE

METHOD AND COMPUTER AND

READABLE RECORDING MEDIUM WITH A PROGRAM FOR MAKING A  
COMPUTER EXECUTE THE METHOD RECORDED THEREIN, AND PROGRAM

5 FOR MAKING A COMPUTER EXECUTE THE METHODCOMPUTER PRODUCT

FIELD OF THE INVENTION

The present invention relates to ~~call service system~~  
~~which, in response to an inquiry received through telephone,~~  
10 ~~an electronic mail or a home page from a user, gives an answer~~  
~~through telephone or a~~ technology of receiving an inquiry  
from a user in the form of a telephone call, electronic mail,  
or over a homepage, giving an answer through a telephone  
call or electronic mail from any one of a plurality of operator  
15 ~~terminals, a call service method and a recording medium as~~  
~~well as a program, and, more particularly, concerns such~~  
~~a call service system which can readily respond to~~ terminals.  
~~an inquiry received through telephone, an electronic mail~~  
~~or a home page efficiently in a versatile manner, a call~~  
20 ~~service method and a recording medium as well as a program~~  
~~for such a call service system.~~

BACKGROUND OF THE INVENTION

Conventionally, there has been known a call service  
25 system in which inquiries from a plurality of users are

received through telephone, and operators successively answer these inquiries. For example, in a reservation center in an airline and telephone-number information service in a telecommunication company, each one of a  
5 plurality of operators are allocated to a plurality of  
operator terminals so as to respond to inquiries  
is provided  
with a operator terminal through which the operator responds  
for to inquiries about empty seats and for telephone numbers.

Moreover, in various companies which used to provide  
10 personal and general affairs sections for respective  
branches so as to carry out personal management and general  
affairs mainly centered on these personal and general affairs  
sections, in recent years, they have unified the personal  
and general affairs sections, and have tried to provide call  
15 service systems mainly used for their employees. More  
specifically, in such a call service system, inquiries  
through telephone are queue-managed, and successively  
allocated to respective operator terminals so that the  
operators are allowed to answer the inquiries through  
20 telephone.

However, along with the recent development in the  
Internet based upon the development of the communication  
electronic technique, in recent years, the call centers need  
to respond not only to inquiries through telephone, but also  
25 to inquiries through electronic mails and home-pages.

For this reason, in most of the recent call service systems, operator terminals dealing with inquiries through telephone and operator terminals dealing with inquiries through electronic mails or home-pages are provided in a separate manner so as to properly respond to the inquiries through telephone, electronic mails and home-pages.

However, even ~~in the case when~~ the above-mentioned conventional technique ~~is used~~, a problem arises in which it is difficult to readily respond to ~~users' demands~~ user demand for receiving an answer through telephone after having given an inquiry through a home-page. For example, ~~in the case when a user tries to give~~ makes an inquiry about personal or general affairs ~~through~~ to a call service system ~~in the company~~, the user is seldom convinced with the matter of the returned answer mail. Because, ~~in most only by the return mail, and in many cases, he or she would like to make another related inquiry.~~ cases, the user wants to make an inquiry about a different but related matter. Moreover, in some cases, the intention of the inquiry from the user is not fully understood by the ~~operator, and~~ operator. ~~In this case,~~ the user might receive an unexpected answer.

In such a case, the method in which the operator directly makes a telephone call to the user will fail to properly respond to the inquiry efficiently, and cause an increase in the processing time for each case. Moreover,



since another operator that is different from the operator who has given the answer through the mail normally makes a call, there is an increase in personal costs on the call center side. Therefore, it is essential to realize a call  
5 service system which can readily satisfy the users' demands for receiving an answer through telephone after having given an inquiry through a home-page.

~~—— The present invention has been achieved in order to solve the above problem (subject). It is an object of this  
10 invention to provide a call service system which can readily respond to an inquiry received through telephone, an electronic mail or a home page efficiently in a versatile manner, a call service method and a recording medium as well as a program for such a call service system.~~

15

#### SUMMARY OF THE INVENTION

It is an object of this invention to provide a technology capable of readily, efficiently, and in a versatile manner respond to an inquiry received through  
20 telephone, electronic mail or homepage.

~~In order to achieve the above mentioned object,~~  
According to one aspect of the present invention,  
~~there is provided a call service system, which, a user selects~~  
a type of communication media to be used when receiving the  
25 answer from an operator terminal in response to an inquiry

received through telephone, an electronic on a client  
terminal. mail or a home page from a user, gives an answer  
through telephone or an electronic mail from any one of a  
plurality of operator terminals, wherein: each of client  
5 terminals (corresponding to a client terminal 103 shown in  
Fig. 1), used by each of the users, comprises: with a user  
interface for selecting a type of communication media to  
be used upon informing the user of the contents of the answer  
through the operator terminal, and a transmission unit for  
10 transmitting the type of communication media selected on  
the user interface, the contents of the inquiry and  
information related to the user to a server, and the server  
comprises: with a queue managing unit (corresponding to a  
telephone queue 112 and an out bound file 115 in Fig. 1)  
15 for queue managing inquiries in which telephone is selected  
as the type of communication media and inquiries from the  
users through telephone in a unified manner, and a processing  
unit for successively processing the respective inquiries  
managed by the queue managing unit by using the plurality  
20 of operator terminals.

—— According to the aspect, the type of communication  
media that is used when the user is informed of the contents  
of an answer from the operator terminal through the user  
interface on each of the client terminals used by each of  
25 the users is selected, and the selected type of communication

media, the contents of the inquiry and information related to the user are transmitted to the server, and the transmitted inquiries in which telephone is selected as the type of communication media and inquiries from the users through telephone are queue managed by the server in a unified manner so that the respective inquiries thus managed are successively processed by the operator terminal; therefore, the inquiries in which telephone is selected as the type of communication media and the inquiries from the user through telephone can be dealt in a unified manner.

— According to another aspect of the present invention, there is provided an call service system according to the above mentioned aspect, wherein the queue managing unit manages a first queue (corresponding to a telephone queue 112 shown in Fig. 1) consisting of a waiting matrix for inquiries in which telephone has been selected as the type of communication media and a second queue (corresponding to the out bound file 115 shown in Fig. 1) consisting of the inquiries from the users through telephone, and the processing unit allocates the inquiries inside the second queue to the respective operator terminals, and in the case when any inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals accepts the inquiries of the first queue successively.

~~According to the aspect, the first queue consisting of the waiting matrix for inquiries in which telephone has been selected as the type of communication media and the second queue consisting of the inquiries from the users through telephone are managed, and the inquiries inside the second queue are allocated to the respective operator terminals, while in the case when any inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals~~  
5 ~~accepts the inquiries of the first queue successively, therefore, without changing any system related to inquiries through telephone, the inquiries in which telephone is selected as the type of communication media are efficiently processed by utilizing unoccupied operator terminals.~~

15 ~~According to still another aspect of the present invention, there is provided a call service system according to the above mentioned aspect, wherein the queue managing unit~~  
The information related to the type of communication media selected by the user, the contents of the inquiry and  
20 information related to the user is transmitted to a server.  
The server manages the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone by using a single queue, and the processing unit successively allocates the inquiries  
25 inside the queue to the respective operator terminals based

~~upon a predetermined rule.~~

~~According to the aspect, the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone are managed by using a single queue, and the inquiries inside the queue are successively allocated to the respective operator terminals based upon a predetermined rule, therefore, it is possible to process the inquiries efficiently by utilizing the system related to inquiries through telephone.~~

~~According to still another aspect of the present invention, there is provided a call service system according to the above mentioned aspect, wherein the queue managing unit is characterized by queue managing a demand for notification (corresponding to out bound data in embodiments) given to the operator terminals so as to simultaneously notify the plurality of users of information items, inquiries (corresponding to requested data in the embodiments) in which telephone is selected as the type of communication media, and inquiries from the users through telephone, in a unified manner.~~

~~According to the aspect, a demand for notification given to the operator terminals so as to simultaneously notify the plurality of users of information items, inquiries in which telephone is selected as the type of communication~~

~~media and inquiries from the users through telephone are queue managed in a unified manner so that a process referred to as an out bound, transmitted from the operator terminal side, is also managed in a unified manner.~~

5 ~~—— According to still another aspect of the present invention, there is provided a call service system according to the above mentioned aspect, wherein the user interface is characterized by comprising a home page inquiry screen that is provided with at least an input frame (corresponding to a selection frame 704 shown in Fig. 8) for allowing a~~  
10 ~~selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry through telephone, an input frame (corresponding to an input frame 701 shown in Fig. 7) used for inputting information related to the user and an input frame (corresponding to an input frame 702 shown in Fig. 7) in which the contents of an inquiry are inputted.~~

~~—— According to the aspect, the user interface is prepared as a home page inquiry screen that is provided with at least~~  
20 ~~an input frame for allowing a selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry through telephone, an input frame used for inputting information related to the user and an input frame in which the contents of an inquiry are inputted,~~  
25 ~~therefore, it is possible to easily make a selection from~~

~~the retrieval of knowledge data base, the inquiry through  
an electronic mail and the inquiry through telephone, on  
the home page.~~

~~According to still another aspect of the present  
invention, wherein in response to an inquiry received through  
5 telephone, an electronic mail or a home page from a user,  
an answer is given through telephone or an electronic mail  
from any one of a plurality of operator terminals, is provided  
with the steps of: selecting a type of communication media  
10 to be used upon informing the user of the contents of the  
answer through the user interface on the client terminal  
used by the user from the operator terminal; transmitting  
the type of communication media selected in the selection  
step, the contents of the inquiry and information related  
15 to the user to the server; queue managing the inquiries in  
which telephone is selected as the type of communication  
media that have been transmitted from the transmission step  
and the inquiries through telephone from the users in a  
unified manner by the server; and successively processing  
20 the inquiries that have been managed by the queue managing  
step by using the plurality of operator terminals.~~

~~According to the aspect, a type of communication media,  
which is to be used upon informing the user of the contents  
of the answer through the user interface on the client  
25 terminal used by the user from the operator terminal, is~~

~~selected, the type of communication media thus selected,  
the contents of the inquiry and information related to the  
user is transmitted to the server, the inquiries in which  
telephone is selected as the type of communication media  
5 that have been transmitted from the transmission step and  
the inquiries from the users through telephone are  
queue managed in a unified manner by the server, and the  
inquires that have been managed by the queue managing step  
are successively processed by using the plurality of operator  
10 terminals; therefore, it is possible to deal with the  
inquiries in which telephone is selected as the type of  
communication media and the inquiries from the users through  
telephone in a unified manner.~~

~~—— According to still another aspect of the present  
15 invention, there is provided a recording medium, which is  
a computer readable recording medium storing a program for  
allowing a computer to execute a call service method in which,  
in response to an inquiry received through telephone, an  
electronic mail or a home page from a user, an answer is  
20 given through telephone or an electronic mail from any one  
of a plurality of operator terminals, is characterized by  
storing the program that allows the computer to execute the  
steps of: selecting a type of communication media to be used  
upon informing the user of the contents of the answer through  
25 the user interface on the client terminal used by the user~~



from the operator terminal; transmitting the type of  
communication media selected in the selection step, the  
contents of the inquiry and information related to the user  
to the server; queue managing the inquiries in which  
5 telephone is selected as the type of communication media  
that have been transmitted from the transmission step and  
the inquiries through telephone from the users in a unified  
manner by the server; and successively processing the  
inquires that have been managed by the queue managing step  
10 by using the plurality of operator terminals.

— According to still another aspect of the present  
invention, there is provided a program, which is for allowing  
a computer to execute a call service method in which, in  
response to an inquiry received through telephone, an  
15 electronic mail or a home page from a user, an answer is  
given through telephone or an electronic mail from any one  
of a plurality of operator terminals, is characterized in  
that it allows the computer to execute the sequences of:  
selecting a type of communication media to be used upon  
20 informing the user of the contents of the answer through  
the user interface on the client terminal used by the user  
from the operator terminal; transmitting the type of  
communication media selected in the selection sequence, the  
contents of the inquiry and information related to the user  
25 to the server; queue managing the inquiries in which

~~telephone is selected as the type of communication media that have been transmitted from the transmission sequence and the inquiries through telephone from the users in a unified manner by the server, and successively processing the inquires that have been managed by the queue managing sequence by using the plurality of operator terminals.~~

~~—— According to the aspect, a type of communication media, which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type of communication media thus selected, the contents of the inquiry and information related to the user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted from the transmission step and the inquiries from the users through telephone are queue managed in a unified manner by the server, and the inquires that have been managed by the queue managing step are successively processed by using the plurality of operator terminals; therefore, it is possible to realize the operation for dealing with the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone in a unified manner by utilizing a computer.~~

~~—— Other objects and features of this invention will~~

~~become understood from the following description with reference to the accompanying drawings.~~

~~BRIEF DESCRIPTION OF THE DRAWINGS~~

5     ~~Fig. 1 is a block diagram that shows a system construction of a call service system in accordance with one embodiment;~~

10     ~~Fig. 2 is an explanatory drawing that shows call receiving procedures in an operator terminal shown in Fig. 1;~~

~~Fig. 3 is an explanatory drawing that shows processing steps that are carried out by the operator terminal shown in Fig. 1;~~

15     ~~Fig. 4 is an explanatory drawing that shows a flow of data in the call service system shown in Fig. 1;~~

~~Fig. 5 is a drawing that shows one example of a display screen upon receipt of a telephone call in the operator terminal shown in Fig. 4;~~

20     ~~Fig. 6 is a drawing that shows one example of a display screen upon clicking a response button shown in Fig. 5;~~

~~Fig. 7 is a drawing that shows one example of a home page on a client terminal shown in Fig. 4;~~

~~Fig. 8 is a drawing that shows another example of a home page on the client terminal shown in Fig. 4;~~

25     ~~Fig. 9 is a drawing that shows another example of a display~~

~~screen upon receipt of a communication on the operator terminal shown in Fig. 4 through the home page;~~

~~Fig. 10 is a drawing that shows one example of a display screen that is given when OK button of Fig. 9 is clicked;~~

5 and

~~Fig. 11 is a drawing that shows one example of a display screen in which, upon escalation from an operator terminal of a first line to an operation terminal of a second line, the operation terminal of the second line is shown.~~

10

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

~~Referring to attached Figures, the following description will discuss preferred embodiments of a call service system in accordance with the present invention, a call service method and a computer readable recording medium that stores a program for allowing a computer to execute such a method. Here, the present preferred embodiment exemplifies a case in which the present invention is applied to a call service system used for personal general~~

15

20 ~~affairs sections.~~

~~First, an explanation will be given of a system construction of a call service system in accordance with the present preferred embodiment. Fig. 1 is a block diagram that shows the system construction of the call service system in accordance with the present embodiment. As illustrated~~

25

~~in this Figure, this call servicesystem is arranged so that  
a user 101 is allowed to make an inquiry related to personal  
or general affairs to a call center 110 through a telephone  
102 or a client terminal 103 that is placed in his or her  
5 working place 100. The telephone 102 is allowed to call  
out to the call center 110 or to receive a call from the  
call center 110.~~

~~Moreover, the client terminal 103 is a terminal device  
which can make an access to and transmit an electronic mail  
10 to a home page of the call center 110 by using a predetermined  
browser. More specifically, this home page screen is  
provided with an input frame in which information related  
to a user is inputted, an input frame in which the contents  
of an inquiry are inputted and an input screen for allowing  
15 the user to make a selection as to which communication medium  
is used to receive the answer to the inquiry, a telephone  
call or an electronic mail.~~

~~When, after having inputted these items, the user  
carries out predetermined processes, the information  
20 related to the user, the contents of the inquiry and the  
type of communication media through which the answer is to  
be received are transmitted to the call center 110. Here,  
in the case when the selection is made so as to receive the  
answer to the inquiry through a telephone call, the user  
25 can receive the corresponding calling in from an operator~~

in the call center 110 through the telephone 102. Here,  
the call center 110 is constituted by an exchange 111, a  
telephone queue 112, operator terminals 113a to 113c, a CTS  
server 114, an out bound file 115, a Web server 116 and a  
5 KB server 117.

—— The exchange 111 is used for establishing a telephone  
communication line between the operator terminals 113a to  
113c and the telephone 102 of the user 101 through a line  
exchange, and upon receipt of calls from a plurality of  
10 telephones, holds a waiting matrix for the calls within the  
telephone queue 112, and successively allocates these to  
any one of the operator terminals 113a to 113c. The telephone  
queue 112 is a queue for carrying out the waiting process  
on the calls from the users 101 through telephone. However,  
15 the telephone queue 112 carries out the queue management  
only on the calls from the telephone 102 of the user 101  
to the call center 110, and the telephone queue 112 does  
not manage inquiries that have been received from other  
communication media.

—— The operator terminals 113a to 113c are terminal  
20 devices through which the operator answers inquiries from  
the user 101 through telephone. In particular, in the  
operator terminals 113a to 113c, calls allocated by the  
exchange 111 are preferentially received so that when the  
25 operator carries out a predetermined operation, the

telephone communication line is established with the telephone 102 which has been held. Moreover, if the stand by state has continued for a predetermined period, the operator terminals 113a to 113c request the CTS server 114 data within  
5 the out bound file 115, which will be described later. When any one of the operator terminal 113a to 113c has received the data from the CTS server 114, it automatically calls out to the telephone number of the telephone contained in the data, and informs the operator of this fact.

10 ——— Here, the display contents on each of the operator terminals 113a to 113c are different depending on cases in which a call is allocated from the exchange 111 and in which data is taken from the out bound file 115.

15 ——— The Web server 116 is a server which functions as a window of the call center 110 that carries data transmission and receipt to and from the client terminal 103 operated by the user 101. More specifically, upon receipt of a request for data base from the client terminal 103, the Web server 116 transmits this request for data base to the KB (knowledge  
20 base) server 117. Moreover, upon receipt of an inquiry through an electronic mail or a home page, it transmits such data to the CTS server 114.

25 ——— The KB server 117 is a server for managing a knowledge data base in which various past inquiries related to personal general affairs sections are stored as knowledge,

and upon receipt of a request for retrieval of data base  
from the Web server 116, carries out a retrieval as to whether  
or not the corresponding knowledge exists on the data base,  
and returns the results of the retrieval to the Web server  
5 116. Here, in this case, the Web server 116 transfers the  
results of the retrieval to the client terminal 103.

Moreover, the KB server 117 regularly retrieves the  
knowledge data base, and extracts data (hereinafter,  
referred to as "out bound data") that is to be simultaneously  
10 sent to a plurality of users and data (hereinafter, referred  
to as "call back data" that is to be called back to the  
corresponding user, and outputs these to the CTS server 114.

The CTS (Computer Telegram Support) server 114 stores  
the out bound data and the call back data received from the  
15 KB server 117 in the out bound file 115, and also stores  
inquiry data to be answered through telephone, received from  
the Web server 116, in the out bound file 115. Here, for  
convenience of explanation, an explanation of inquiry data  
to be answered through an electronic mail is omitted; however,  
20 such inquiry data is processed by an operator terminal  
installed in a separated manner.

Moreover, upon receipt of a request for data from any  
one of the operator terminals 113a to 113c, the CTS server  
114 extracts the out bound data, call back data and inquiry  
25 data stored in the out bound file 115, and transfers these



~~to the operator terminals 113a to 113c.~~

~~—— The out bound file 115 is a kind of queue that stores the out bound data, call back data and inquiry data in the order of receipts. Here, since such inquiry data is a kind of in bound data that is forwarded from the user 101 side to the call center 110 side, it is said that the out bound file 115 deals with the out bound data, call back data and in bound data in a unified manner.~~

~~—— In the call service system having the above mentioned construction, since a selection can be made from the retrieval of the knowledge data base, an inquiry through an electronic mail and an answer through telephone from the inquiry screen of a home page of the Web server 116, the user 101 is allowed to receive a totalized service based upon the unified screen.~~

~~—— Moreover, in the case when the answer through telephone is selected on the home page, one of the operator terminals 113a to 113c, received this data, automatically calls out to the telephone 102 of the user 101 so that it is possible to reduce the work load imposed on the operator. In particular, any one of the unoccupied operator terminals 113a to 113c is allowed to request for data in the out bound file 115; therefore, it is possible to easily increase operator terminals. Furthermore, since the out bound data, call back data and in bound data are unified in the out bound~~

~~file 115, data exchange to and from the respective operators can be carried out efficiently.~~

~~Next, a detailed explanation will be given of a call handling operation by the operator using the operator terminals 113a to 113e shown in Fig. 1. Fig. 2 is an explanatory drawing that shows the call handling operation by the operator using the operator terminals 113a to 113e shown in Fig. 1. As illustrated in this Figure, from the viewpoint of the call handling operation, the call center 110 is constituted by a front office 200, a main office personal section 210, a head quarter personal section 220, a back office 230, etc.~~

~~The front office 200 is constituted by a first line (1st line) 201 for carrying out a normal call handling operation and a second line (2nd line) 202 of a technical operation group for carrying out a call handling operation in the case when the first line 201 fails to solve a specific problem. To this first line 201, operators handling personal affairs, wages, financial affairs, life insurance (social insurance), working conditions, travel expenses, systems, etc. are assigned. In this case, however, one operator may handle a plurality of the items. Here, each of the operator terminals can automatically activate a screen related to a subject (a user having an inquiry).~~

~~To the second line 202, persons in charge of the~~

respective operations (operation 1 to operation 5) are assigned, and these persons normally carry out the operations related to personal affairs, wages, etc. Only in the case when the first line 201 fails to solve a specific problem, the specific inquiry is escalated to the second line 202, and the corresponding voice and image screens are simultaneously transferred thereto. After the contents of an answer has been formed in the second line 202, the contents of the answer are call back registered in the out bound file 115, or given to the telephone 102 through a call.

— Additionally, in the case when the specific problem can not be solved even by the second line 202, it is further escalated to the back office 230 where the expert is available. Here, those inquiries that have been solved and those that have not been solved are respectively stored in the CTS server in a separated manner, and those inquiries can be reviewed from the main office personal section 210 and the headquarter personal section 220.

— In this manner, in the present embodiment, the operators in the front office 201 are arranged in the two systems of the first line 201 and the second line 202 so that the first line 201 accepts inquiries and basically handles them, and only in the case when the expert's help is required, the second line 202 accepts the escalation, and this is combined into the first line 201 only in the

case when the number of waiting calls has increased, therefore,  
it is possible to smoothly absorb the difference between  
the high rate and low rate in the operation rate of the  
operators.

5       ~~Next, an explanation will be given of a sequence of  
processes in the operator terminals 113a to 113c shown in  
Fig. 1. Fig. 3 is an explanatory drawing that explains the  
sequence of processes in the operator terminal 113a shown  
in Fig. 1. Here, the same processes are carried out in the  
10 operator terminals 113b to 113c. As illustrated in this  
Figure, telephone calls and data arrive in the operator  
terminal 113a through two routes. More specifically, a user  
101 gives a telephone call to the call center 110 through  
the telephone 102, the operator terminal 113a receives the  
15 telephone call through a public line network and the exchange  
111.~~

~~Moreover, in the case when, on a home page of the client  
terminal 103, a user 101 inputs basic information such as  
information related the user and selection of the type of  
20 media through which the answer is received (step S301),  
inputs the contents of an inquiry (step S302), inputs the  
number of the near by telephone (the telephone number of  
the telephone 102) (step S303) and specifies a predetermined  
input frame so as to transmit the inquiry data (step S304),  
25 the inquiry data is stored in the out bound file 115 through~~

the Web server 116. Thus, the operator terminal 113a first confirms whether or not there is any received telephone call (step S305), and if there is any received telephone call (Yes, at step S305), the operator answers the call (step 5 S308), and the telephone line is then disconnected (step S309).

—— In contrast, if there is no received telephone call (No, at step S305), the operator confirms whether or not there is any data in the out bound file 115 (step S306), and if there is any data (Yes, at step S306), the operator 10 gives an automatic transmission to the telephone 102 (step S307), carries out a telephone call process (step S308), and then makes the telephone line disconnected (step S309). Moreover, in the case when there is no data in the out bound 15 file 115 (No, in step S306), after a timer has counted a predetermined period time until the process has been finished, the sequence proceeds to step S305 (step S310 to S311).

—— Here, the reason why the confirmation of the receipt of the telephone call at step S305 is more preferentially made than the confirmation of the receipt of the data within 20 the out bound file 115 at step S306 is because it is necessary to preferentially process the telephone call connected through the on line. However, the steps S305 and S206 may be regularly reversed so that a fixed amount of the received 25 data may be processed within the out bound file 115.

~~Next, an explanation will be given of a flow of data and screen display images in the call service system shown in Fig. 1. Fig. 4 is an explanatory drawing that shows the flow of data in the call service system shown in Fig. 1.~~

5 ~~Moreover, Figs. 5 to 12 are drawings that show examples of respective display screens. As shown in these Figures, when a user 101 makes a telephone call to the call center 110 from the telephone 102 in his or her office 100, the telephone call arrives at the exchange 111 through the public line~~

10 ~~network, and is then received by an operator terminal of the first line. Here, for convenience of explanation, the operator terminal 113a is set to be the first line terminal, and the operator terminal 410 is set to be the second line terminal.~~

15 ~~Fig. 5 shows one example of the display screen at the time when the operator terminal 113a, shown in Fig. 4, has received the telephone call, and Fig. 6 shows one example of the display screen at the time when a response button, shown in Fig. 5, has been clicked.~~

20 ~~As illustrated in Fig. 5, in this case, a message "Call received", which clearly informs the operator of the fact that there is any received telephone call, is widely displayed on the screen. Thus, the operator on the terminal 113a answers the call, receives the contents of an inquiry,~~

25 ~~and gives an answer to the user. Here, when the response~~

button in Fig. 5 is clicked, only information related to the user, as shown Fig. 6, is displayed on the screen of the operator terminal 113a. Here, in the case when a user gives an inquiry through a home page on the client terminal 103 in the office 100, the user inputs a user code 401a, the contents of the inquiry 401b, a telephone number 401c, etc., in the home page 401, and transmit these.

— Figs. 7 and 8 are drawings that show one example of the home page 401 on the client terminal shown in Fig. 4. As illustrated in this Figure, the home page 401 is provided with an input frame 701 through which the user number 401a is inputted, an input frame 702 in which the contents 401b of an inquiry is inputted, and an input frame 703 in which the telephone number 401c is inputted. Moreover, there is also a selection frame 704 for allowing a selection as to whether an answer to the inquiry is given through an electronic mail or through telephone. When a transmission button 705 is clicked, these data are transmitted to the Web server 116, and stored inside the out bound file 115.

— Again in Fig. 4, the out bound file 115 is provided with a user code frame 402, an inquiry contents frame 403, an answer contents frame 404 and a telephone number frame 405, and in accordance with these forms, the inquiry data is stored in the out bound file 115. Here, the out bound data and the call back data are extracted from the knowledge

~~data base of the KB server 117, if necessary, and stored in the out bound file 115.~~

~~Accordingly, the out bound data, call back data and inquiry data are stored in the out bound file 115 so that the operator terminal 113a requests data within the out bound file 115 during an unoccupied time, and automatically transmits the resulting data to the telephone 102 of the user 101 so as to allow the operator to confirm the connection of the telephone line.~~

~~Fig. 9 is a drawing that shows one example of the display screen in the case when a transmission from the home page has arrived in the operator terminal 113a shown in Fig. 4, and Fig. 10 is a drawing that shows one example of a screen at the time when an OK button shown in Fig. 9 is clicked.~~

~~As illustrated in Fig. 9, in this case, a message "Inquiry from the home page", which clearly indicates that there is any data arrival from the home page, is widely displayed on the screen. When the OK button in the center of this message is clicked, a screen shown in Fig. 10 is displayed. As illustrated in Fig. 10, in this display screen, not only the information related to the user, but also the contents of the inquiry are displayed. Thus, the operator of the operator terminal 113a recognizes that the inquiry is given through the home page, answers the call while considering the contents of the inquiry, and gives an answer~~



~~to the user about the contents of the inquiry.~~

~~—— Here, in the case when the operator of the operator terminal 113a in the first line is unable to answer the inquiry, the inquiry is escalated to the operator terminal 410 in the second line. In other words, the escalation of this type allows the operator terminal 410 in the second line to display data, such as the user code 411, the contents of the inquiry 412 and the telephone number 410; thus, in the operator terminal 410 in the second line, the contents of the inquiry 412 are examined, the contents of an answer 414 are formed, and the resulting data is answer registered in the out bound file 115 as a call back request.~~

~~—— Fig. 11 is a drawing that shows one example of the display screen on the operator terminal 410 in the second line in the case when the escalation has been made from the operator terminal 113a in the first line to the operator terminal 410 in the second line. As illustrated in this Figure, the display screen formed by adding the contents of the answer to the contents of the display of Fig. 10 is provided on the operator terminal 410.~~

~~—— As described above, in the present embodiment, an arrangement is made so that, from the inquiry screen of the home page of the Web server 116, a selection is made among the retrieval of the knowledge data base, the inquiry through an electronic mail and the receipt of an answer through~~

~~telephone; therefore, the user 101 is allowed to receive a totalized service based upon the unified screen.~~

~~Moreover, in the case when the answer through telephone is selected in the home page, the corresponding one of operator terminals 113a to 113c automatically calls out to the telephone 102 of the user 101; therefore, it is possible to reduce work loads imposed on the operators.~~

~~Furthermore, any one of the unoccupied operator terminals 113a to 113c is allowed to request for data in the out bound file 115; therefore, it is possible to easily increase operator terminals. Furthermore, since the out bound data, call back data and in bound data are unified in the out bound file 115, data exchange to and from the respective operators can be carried out efficiently.~~

~~The present embodiment has exemplified a case in which the telephone queue 112 and the out bound file 115 are placed in a separated manner; however, the present invention is not intended to be limited by this arrangement, and both of the queues may be unified into one. The unified queue of this type makes it possible to utilize the analogy of the operator terminal load control given by the exchange to a maximum degree.~~

~~Moreover, the present embodiment has exemplified a case in which the present invention is applied to the call service system related to the personal general affairs~~

sections; however, the present invention is not intended  
to be limited by this, and the present invention may be applied  
to a reservation system in air lines, a telephone number  
system in communication enterprises, or a user support system  
5 in makers.

—— As described above, according to one aspect of the  
present invention, a type of communication media, which is  
to be used upon informing the user of the contents of the  
answer through the user interface on the client terminal  
10 used by the user from the operator terminal, is selected,  
the type of communication media selected in the selection  
step, the contents of the inquiry and information related  
to the user to the server are transmitted to the server,  
the inquiries in which telephone is selected as the type  
15 of communication media that have been transmitted and the  
inquiries through telephone from the users are queue managed  
in a unified manner by the server, and the inquiries that  
have been managed are successively processed by using the  
plurality of operator terminals; therefore, the inquiries  
20 in which telephone is selected as the type of communication  
media and the inquiries from the users through telephone  
can be handled in a unified manner, thereby making it possible  
to provide a call service system which can readily respond  
to an inquiry received through telephone, an electronic mail  
25 or a home page efficiently in a versatile manner.

~~Moreover, according to one aspect of the present invention, a first queue consisting of a waiting matrix for inquiries in which telephone has been selected as the type of communication media and a second queue consisting of the inquiries from the users through telephone are managed, and the inquiries inside the second queue are allocated to the respective operator terminals, while in the case when any inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals accepts the inquiries of the first queue successively; therefore, it becomes possible to provide a call service system in which, without changing any system related to inquiries through telephone, the inquiries in which telephone is selected as the type of communication media are efficiently processed by utilizing unoccupied operator terminals,~~

~~Moreover, according to one aspect of the present invention, the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone are managed by using a single queue, and the inquiries inside the queue are allocated to the respective operator terminals based upon a predetermined rule; therefore, it is possible to provide a call system which can deal with the inquiries efficiently by utilizing the system related to inquiries through telephone.~~

~~Moreover, according to one aspect of the present invention, a demand for notification given to the operator terminals so as to simultaneously notify the plurality of users of information items, inquiries in which telephone is selected as the type of communication media, and inquiries from the users through telephone are queue managed in a unified manner; therefore, it is possible to provide a call service system which can also deal with a process referred to as an out bound, transmitted from the operator terminal side, in a unified manner.~~

~~Moreover, according to one aspect of the present invention, the user interface is prepared as a home page inquiry screen that is provided with at least an input frame for allowing a selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry through telephone, an input frame used for inputting information related to the user and an input frame in which the contents of an inquiry are inputted; therefore, it is possible to provide a call service system which efficiently allows a selection from the retrieval of knowledge data base, the inquiry through an electronic mail and the inquiry through telephone, on the home page.~~

~~Moreover, according to still another the present invention, a type of communication media, which is to be used upon informing the user of the contents of the answer~~

through the user interface on the client terminal used by  
the user from the operator terminal, is selected, the type  
of communication media thus selected, the contents of the  
inquiry and information related to the user is transmitted  
5 to the server, the inquiries in which telephone is selected  
as the type of communication media that have been transmitted  
and the inquiries from the users through telephone are  
queue managed in a unified manner by the server, and the  
inquires that have been managed are successively processed  
10 by using the plurality of operator terminals; therefore,  
it is possible to deal with the inquiries in which telephone  
is selected as the type of communication media and the  
inquiries from the users through telephone in a unified  
manner, and consequently to provide a call service system  
15 which can readily respond to an inquiry received through  
telephone, an electronic mail or a home page efficiently  
in a versatile manner.

— Moreover, according to still another with the present  
invention, a type of communication media, which is to be  
20 used upon informing the user of the contents of the answer  
through the user interface on the client terminal used by  
the user from the operator terminal, is selected, the type  
of communication media thus selected, the contents of the  
inquiry and information related to the user is transmitted  
25 to the server, the inquiries in which telephone is selected

as the type of communication media that have been transmitted  
and the inquiries from the users through telephone are  
queue managed in a unified manner by the server, and the  
inquires that have been managed are successively processed  
5 by using the plurality of operator terminals; therefore,  
it is possible to realize the operation for dealing with  
the inquiries in which telephone is selected as the type  
of communication media and the inquiries from the users  
through telephone in a unified manner by utilizing a computer,  
10 and consequently to provide a recording medium that allows  
the computer to execute a call service method which can  
readily respond to an inquiry received through telephone,  
an electronic mail or a home page efficiently in a versatile  
manner.

15 — Although the invention has been described with respect  
to a specific embodiment for a complete and clear disclosure,  
the appended claims are not to be thus limited but are to  
be construed as embodying all modifications and alternative  
constructions that may occur to one skilled in the art which  
20 fairly fall within the basic teaching herein set forth.

-

a telephone call is selected as a mode of receiving the answer,  
and the inquiries received in the form of a telephone call  
5 in a unified manner. Then the server provides a control  
to successively process the inquiries in the queue on the  
terminal of the operator. Therefore, the inquiries that  
are to be answered through a telephone call, and the inquiries  
received in the form of telephone call can be dealt in a  
10 unified manner.

The client terminal may be a telephone machine and  
a computer which can access homepages or send or receive  
emails. There may be a plurality of client terminals and  
operator terminals.

15 The computer program according to another aspect of  
the present invention stores instructions which when  
executed realizes on a computer the method according to the  
present invention.

The computer readable recording medium according to  
20 still another aspect of the present invention stores a  
computer program which when executed realizes a computer  
the method according to the present invention.

Other objects and features of this invention will  
become apparent from the following description with  
25 reference to the accompanying drawings.



## BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram that shows a system construction of a call service system in accordance with one embodiment;

Fig. 2 is an explanatory drawing that shows call receiving procedures in an operator terminal shown in Fig. 1;

Fig. 3 is an explanatory drawing that shows processing steps that are carried out by the operator terminal shown in Fig. 1;

Fig. 4 is an explanatory drawing that shows a flow of data in the call service system shown in Fig. 1;

Fig. 5 is a drawing that shows one example of a display screen upon receipt of a telephone call in the operator terminal shown in Fig. 4;

Fig. 6 is a drawing that shows one example of a display screen upon clicking a response button shown in Fig. 5;

Fig. 7 is a drawing that shows one example of a homepage on a client terminal shown in Fig. 4;

Fig. 8 is a drawing that shows another example of a homepage on the client terminal shown in Fig. 4;

Fig. 9 is a drawing that shows another example of a display screen upon receipt of a communication on the operator terminal shown in Fig. 4 through the homepage;

Fig. 10 is a drawing that shows one example of a display screen that is given when OK button of Fig. 9 is clicked; and

Fig. 11 is a drawing that shows one example of a display screen in which, upon escalation from an operator terminal of a first line to an operation terminal of a second line, the operation terminal of the second line is shown.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

Preferred embodiments of the present invention will be explained in detail below with reference to the accompanying drawings. These embodiment exemplifies a case in which the present invention is applied to a call service system used for personal-general affairs sections.

System construction of a call service system according to one embodiment will now be explained. Fig. 1 is a block diagram that shows the system construction of this call service system. In this system, the user 101 can make an inquiry related to personal or general affairs to the call center 110 either over the telephone 102 or the client terminal 103. The telephone 102 or the client terminal 103 is placed in the working place 100 of the user 101. The user 101 can use the telephone 102 to make a call to or receive a call from the call center 110.

Moreover, the client terminal 103 is a terminal device

which can make an access to and transmit an electronic mail to a homepage of the call center 110 by using a predetermined browser. More specifically, this homepage screen is provided with an input frame in which information related to a user is input, an input frame in which the contents of an inquiry are input and an input screen for allowing the user to make a selection as to which communication medium is used to receive the answer to the inquiry, a telephone call or an electronic mail.

When, after having input these items, the user carries out predetermined processes, the information related to the user, the contents of the inquiry and the type of communication media through which the answer is to be received are transmitted to the call center 110. Here, when the selection is made so as to receive the answer to the inquiry through a telephone call, the user can receive the corresponding calling-in from an operator in the call center 110 through the telephone 102. Here, the call center 110 is constituted by an exchange 111, a telephone queue 112, operator terminals 113a to 113c, a CTS server 114, an out-bound file 115, a Web server 116 and a KB server 117.

The exchange 111 is used for establishing a telephone communication line between the operator terminals 113a to 113c and the telephone 102 of the user 101 through a line exchange, and upon receipt of calls from a plurality of

telephones, holds a waiting matrix for the calls within the telephone queue 112, and successively allocates these to anyone of the operator terminals 113a to 113c. The telephone queue 112 is a queue for carrying out the waiting process on the calls from the users 101 through telephone. However, the telephone queue 112 carries out the queue-management only on the calls from the telephone 102 of the user 101 to the call center 110, and the telephone queue 112 does not manage inquiries that have been received from other communication media.

The operator terminals 113a to 113c are terminal devices through which the operator answers inquiries from the user 101 through telephone. In particular, in the operator terminals 113a to 113c, calls allocated by the exchange 111 are preferentially received so that when the operator carries out a predetermined operation, the telephone communication line is established with the telephone 102 which has been held. Moreover, if the stand-by state has continued for a predetermined period, the operator terminals 113a to 113c request the CTS server 114 data within the out-bound file 115, which will be described later. When any one of the operator terminal 113a to 113c has received the data from the CTS server 114, it automatically calls out to the telephone number of the telephone contained in the data, and informs the operator of this fact.

Here, the display contents on each of the operator terminals 113a to 113c are different depending on cases in which a call is allocated from the exchange 111 and in which data is taken from the out-bound file 115.

5       The Web server 116 is a server which functions as a window of the call center 110 that carries data transmission and receipt to and from the client terminal 103 operated by the user 101. More specifically, upon receipt of a request for data base from the client terminal 103, the Web server  
10       116 transmits this request for data base to the KB (knowledge base) server 117. Moreover, upon receipt of an inquiry through an electronic mail or a homepage, it transmits such data to the CTS server 114.

The KB server 117 is a server for managing a knowledge  
15       data base in which various past inquiries related to personal-general affairs sections are stored as knowledge, and upon receipt of a request for retrieval of data base from the Web server 116, carries out a retrieval as to whether or not the corresponding knowledge exists on the data base,  
20       and returns the results of the retrieval to the Web server 116. Here, in this case, the Web server 116 transfers the results of the retrieval to the client terminal 103.

Moreover, the KB server 117 regularly retrieves the knowledge data base, and extracts data (hereinafter,  
25       referred to as "out-bound data") that is to be simultaneously

sent to a plurality of users and data (hereinafter, referred to as "call-back data" that is to be called back to the corresponding user, and outputs these to the CTS server 114.

The CTS (Computer Telegram Support) server 114 stores  
5 the out-bound data and the call-back data received from the  
KB server 117 in the out-bound file 115, and also stores  
inquiry data to be answered through telephone, received from  
the Web server 116, in the out-bound file 115. Here, for  
convenience of explanation, an explanation of inquiry data  
10 to be answered through an electronic mail is omitted.  
However, such inquiry data is processed by an operator  
terminal installed in a separated manner.

Moreover, upon receipt of a request for data from any  
one of the operator terminals 113a to 113c, the CTS server  
15 114 extracts the out-bound data, call-back data and inquiry  
data stored in the out-bound file 115, and transfers these  
to the operator terminals 113a to 113c.

The out-bound file 115 is a kind of queue that stores  
the out-bound data, call-back data and inquiry data in the  
20 order of receipts. Here, since such inquiry data is a kind  
of in-bound data that is forwarded from the user 101 side  
to the call center 110 side, it is said that the out-bound  
file 115 deals with the out-bound data, call-back data and  
in-bound data in a unified manner.

25 In the call service system having the above-mentioned

construction, since a selection can be made from the retrieval of the knowledge data base, an inquiry through an electronic mail and an answer through telephone from the inquiry screen of a homepage of the Web server 116, the user  
5 101 is allowed to receive a totalized service based upon the unified screen.

Moreover, when the answer through telephone is selected on the homepage, one of the operator terminals 113a to 113c, received this data, automatically calls out to the  
10 telephone 102 of the user 101 so that it is possible to reduce the work load imposed on the operator. In particular, any one of the unoccupied operator terminals 113a to 113c is allowed to request for data in the out-bound file 115. Therefore, it is possible to easily increase operator  
15 terminals. Furthermore, since the out-bound data, call-back data and in-bound data are unified in the out-bound file 115, data exchange to and from the respective operators can be carried out efficiently.

Next, a detailed explanation will be given of a call  
20 handling operation by the operator using the operator terminals 113a to 113c shown in Fig. 1. Fig. 2 is an explanatory drawing that shows the call handling operation by the operator using the operator terminals 113a to 113c shown in Fig. 1. As illustrated in this Figure, from the  
25 viewpoint of the call handling operation, the call center

110 is constituted by a front office 200, a main office personal section 210, a head quarter personal section 220, a back-office 230, etc.

The front office 200 is constituted by a first line (1st line) 201 for carrying out a normal call handling operation and a second line (2nd line) 202 of a technical operation group for carrying out a call handling operation when the first line 201 fails to solve a specific problem. To this first line 201, operators handling personal affairs, wages, financial affairs, life insurance (social insurance), working conditions, travel expenses, systems, etc. are assigned. In this case, however, one operator may handle a plurality of the items. Here, each of the operator terminals can automatically activate a screen related to a subject (a user having an inquiry).

To the second line 202, persons in charge of the respective operations (operation 1 to operation 5) are assigned, and these persons normally carry out the operations related to personal affairs, wages, etc. Only when the first line 201 fails to solve a specific problem, the specific inquiry is escalated to the second line 202, and the corresponding voice and image screens are simultaneously transferred thereto. After the contents of an answer has been formed in the second line 202, the contents of the answer are call-back-registered in the out-bound file 115, or given



to the telephone 102 through a call.

Additionally, when the specific problem can not be solved even by the second line 202, it is further escalated to the back office 230 where the expert is available. Here, those inquiries that have been solved and those that have not been solved are respectively stored in the CTS server in a separated manner, and those inquiries can be reviewed from the main office personal section 210 and the head quarter personal section 220.

In this manner, in the present embodiment, the operators in the front office 201 are arranged in the two systems of the first line 201 and the second line 202 so that the first line 201 accepts inquiries and basically handles them, and only when the expert's help is required, the second line 202 accepts the escalation, and this is combined into the first line 201 only when the number of waiting calls has increased. Therefore, it is possible to smoothly absorb the difference between the high rate and low rate in the operation rate of the operators.

Next, an explanation will be given of a sequence of processes in the operator terminals 113a to 113c shown in Fig. 1. Fig. 3 is an explanatory drawing that explains the sequence of processes in the operator terminal 113a shown in Fig. 1. Here, the same processes are carried out in the operator terminals 113b to 113c. As illustrated in this

Figure, telephone calls and data arrive in the operator terminal 113a through two routes. More specifically, a user 101 gives a telephone call to the call center 110 through the telephone 102, the operator terminal 113a receives the  
5 telephone call through a public line network and the exchange 111.

Moreover, when, on a homepage of the client terminal 103, a user 101 inputs basic information such as information related the user and selection of the type of media through  
10 which the answer is received (step S301), inputs the contents of an inquiry (step S302), inputs the number of the near-by telephone (the telephone number of the telephone 102) (step S303) and specifies a predetermined input frame so as to transmit the inquiry data (step S304), the inquiry data is  
15 stored in the out-bound file 115 through the Web server 116. Thus, the operator terminal 113a first confirms whether or not there is any received telephone call (step S305), and if there is any received telephone call (Yes, at step S305), the operator answers the call (step S308), and the telephone  
20 line is then disconnected (step S309).

In contrast, if there is no received telephone call (No, at step S305), the operator confirms whether or not there is any data in the out-bound file 115 (step S306), and if there is any data (Yes, at step S306), the operator  
25 gives an automatic transmission to the telephone 102 (step

S307), carries out a telephone call process (step S308), and then makes the telephone line disconnected (step S309). Moreover, when there is no data in the out-bound file 115 (No, in step S306), after a timer has counted a predetermined  
5 period time until the process has been finished, the sequence proceeds to step S305 (step S310 to S311).

Here, the reason why the confirmation of the receipt of the telephone call at step S305 is more preferentially made than the confirmation of the receipt of the data within  
10 the out-bound file 115 at step S306 is because it is necessary to preferentially process the telephone call connected through the on-line. However, the steps S305 and S206 may be regularly reversed so that a fixed amount of the received data may be processed within the out-bound file 115.

15 Next, an explanation will be given of a flow of data and screen display images in the call service system shown in Fig. 1. Fig. 4 is an explanatory drawing that shows the flow of data in the call service system shown in Fig. 1. Moreover, Fig. 5 to Fig. 12 are drawings that show examples  
20 of respective display screens. As shown in these Figures, when a user 101 makes a telephone call to the call center 110 from the telephone 102 in his or her office 100, the telephone call arrives at the exchange 111 through the public line network, and is then received by an operator terminal  
25 of the first line. Here, for convenience of explanation,

the operator terminal 113a is set to be the first line terminal,  
and the operator terminal 410 is set to be the second line  
terminal.

Fig. 5 shows one example of the display screen at the  
5 time when the operator terminal 113a, shown in Fig. 4, has  
received the telephone call, and Fig. 6 shows one example  
of the display screen at the time when a response button,  
shown in Fig. 5, has been clicked.

As illustrated in Fig. 5, in this case, a message "Call  
10 received", which clearly informs the operator of the fact  
that there is any received telephone call, is widely  
displayed on the screen. Thus, the operator on the terminal  
113a answers the call, receives the contents of an inquiry,  
and gives an answer to the user. Here, when the response  
15 button in Fig. 5 is clicked, only information related to  
the user, as shown Fig. 6, is displayed on the screen of  
the operator terminal 113a. Here, when a user gives an  
inquiry through a homepage on the client terminal 103 in  
the office 100, the user inputs a user code 401a, the contents  
20 of the inquiry 401b, a telephone number 401c, etc., in the  
home page 401, and transmit these.

Fig. 7 and Fig. 8 are drawings that show one example  
of the homepage 401 on the client terminal shown in Fig.  
4. The homepage 401 is provided with an input frame 701  
25 through which the user number 401a is input, an input frame

702 in which the contents 401b of an inquiry is input, and  
an input frame 703 in which the telephone number 401c is  
input. Moreover, there is also a selection frame 704 for  
allowing a selection as to whether an answer to the inquiry  
5 is given through an electronic mail or through telephone.  
When a transmission button 705 is clicked, these data are  
transmitted to the Web server 116, and stored inside the  
out-bound file 115.

Again in Fig. 4, the out-bound file 115 is provided  
10 with a user code frame 402, an inquiry contents frame 403,  
an answer contents frame 404 and a telephone number frame  
405, and in accordance with these forms, the inquiry data  
is stored in the out-bound file 115. Here, the out-bound  
data and the call-back data are extracted from the knowledge  
15 data base of the KB server 117, if necessary, and stored  
in the out-bound file 115.

Accordingly, the out-bound data, call-back data and  
inquiry data are stored in the out-bound file 115 so that  
the operator terminal 113a requests data within the out-bound  
20 file 115 during an unoccupied time, and automatically  
transmits the resulting data to the telephone 102 of the  
user 101 so as to allow the operator to confirm the connection  
of the telephone line.

Fig. 9 is a drawing that shows one example of the display  
25 screen when a transmission from the homepage has arrived

in the operator terminal 113a shown in Fig. 4, and Fig. 10  
is a drawing that shows one example of a screen at the time  
when an OK button shown in Fig. 9 is clicked.

As illustrated in Fig. 9, in this case, a message  
5 "Inquiry from the homepage", which clearly indicates that  
there is any data arrival from the homepage, is widely  
displayed on the screen. When the OK button in the center  
of this message is clicked, a screen shown in Fig. 10 is  
displayed. As illustrated in Fig. 10, in this display screen,  
10 not only the information related to the user, but also the  
contents of the inquiry are displayed. Thus, the operator  
of the operator terminal 113a recognizes that the inquiry  
is given through the homepage, answers the call while  
considering the contents of the inquiry, and gives an answer  
15 to the user about the contents of the inquiry.

When the operator of the operator terminal 113a in  
the first line is unable to answer the inquiry, the inquiry  
is escalated to the operator terminal 410 in the second line.  
In other words, the escalation of this type allows the  
20 operator terminal 410 in the second line to display data,  
such as the user code 411, the contents of the inquiry 412  
and the telephone number 410. Thus, in the operator terminal  
410 in the second line, the contents of the inquiry 412 are  
examined, the contents of an answer 414 are formed, and the  
25 resulting data is answer-registered in the out-bound file

115 as a call-back request.

Fig. 11 is a drawing that shows one example of the display screen on the operator terminal 410 in the second line when the escalation has been made from the operator terminal 113a in the first line to the operator terminal 410 in the second line. The display screen formed by adding the contents of the answer to the contents of the display of Fig. 10 is provided on the operator terminal 410.

As described above, in the present embodiment, an arrangement is made so that, from the inquiry screen of the homepage of the Web server 116, a selection is made among the retrieval of the knowledge data base, the inquiry through an electronic mail and the receipt of an answer through telephone. Therefore, the user 101 is allowed to receive a totalized service based upon the unified screen.

Moreover, when the answer through telephone is selected in the homepage, the corresponding one of operator terminals 113a to 113c automatically calls out to the telephone 102 of the user 101. Therefore, it is possible to reduce work loads imposed on the operators.

Furthermore, any one of the unoccupied operator terminals 113a to 113c is allowed to request for data in the out-bound file 115. Therefore, it is possible to easily increase operator terminals. Furthermore, since the out-bound data, call-back data and in-bound data are unified

in the out-bound file 115, data exchange to and from the  
respective operators can be carried out efficiently.

The present embodiment has exemplified a case in which  
the telephone queue 112 and the out-bound file 115 are placed  
5 in a separated manner. However, the present invention is  
not intended to be limited by this arrangement, and both  
of the queues may be unified into one. The unified queue  
of this type makes it possible to utilize the analogy of  
the operator-terminal load control given by the exchange  
10 to a maximum degree.

Moreover, the present embodiment has exemplified a  
case in which the present invention is applied to the call  
service system related to the personal-general affairs  
sections. However, the present invention is not intended  
15 to be limited by this, and the present invention may be applied  
to a reservation system in air lines, a telephone number  
system in communication enterprises, or a user support system  
in makers.

As described above, according to the present invention,  
20 a type of communication media, which is to be used upon  
informing the user of the contents of the answer through  
the user interface on the client terminal used by the user  
from the operator terminal, is selected, the type of  
communication media selected in the selection step, the  
25 contents of the inquiry and information related to the user



to the server are transmitted to the server; the inquiries in which telephone is selected as the type of communication media that have been transmitted and the inquiries through telephone from the users are queue-managed in a unified manner by the server, and the inquiries that have been managed are successively processed by using the plurality of operator terminals. Therefore, the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone can be handled in a unified manner, thereby making it possible to provide a call service system which can readily respond to an inquiry received through telephone, an electronic mail or a homepage efficiently in a versatile manner.

Moreover, a first queue consisting of a waiting matrix for inquiries in which telephone has been selected as the type of communication media and a second queue consisting of the inquiries from the users through telephone are managed, and the inquiries inside the second queue are allocated to the respective operator terminals, while when any inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals accepts the inquiries of the first queue successively. Therefore, it becomes possible to provide a call service system in which, without changing any system related to inquiries through telephone, the inquiries in

which telephone is selected as the type of communication media are efficiently processed by utilizing unoccupied operator terminals,

Moreover, the inquiries in which telephone is selected  
5 as the type of communication media and the inquiries from the users through telephone are managed by using a single queue, and the inquiries inside the queue are allocated to the respective operator terminals based upon a predetermined rule. Therefore, it is possible to provide a call system  
10 which can deal with the inquiries efficiently by utilizing the system related to inquiries through telephone.

Moreover, a demand for notification given to the operator terminals so as to simultaneously notify the plurality of users of information items, inquiries in which  
15 telephone is selected as the type of communication media, and inquiries from the users through telephone are queue-managed in a unified manner. Therefore, it is possible to provide a call service system which can also deal with a process referred to as an out-bound, transmitted  
20 from the operator terminal side, in a unified manner.

Moreover, the user interface is prepared as a home-page inquiry screen that is provided with at least an input frame for allowing a selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry  
25 through telephone, an input frame used for inputting

information related to the user and an input frame in which the contents of an inquiry are input. Therefore, it is possible to provide a call service system which efficiently allows a selection from the retrieval of knowledge data base,  
5 the inquiry through an electronic mail and the inquiry through telephone, on the homepage.

Moreover, a type of communication media, which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by  
10 the user from the operator terminal, is selected, the type of communication media thus selected, the contents of the inquiry and information related to the user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted  
15 and the inquiries from the users through telephone are queue-managed in a unified manner by the server, and the inquiries that have been managed are successively processed by using the plurality of operator terminals. Therefore, it is possible to deal with the inquiries in which telephone  
20 is selected as the type of communication media and the inquiries from the users through telephone in a unified manner, and consequently to provide a call service system which can readily respond to an inquiry received through telephone, an electronic mail or a homepage efficiently in  
25 a versatile manner.

Moreover, a type of communication media, which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type of communication media thus selected, the contents of the inquiry and information related to the user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted and the inquiries from the users through telephone are queue-managed in a unified manner by the server, and the inquiries that have been managed are successively processed by using the plurality of operator terminals. Therefore, it is possible to realize the operation for dealing with the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone in a unified manner by utilizing a computer, and consequently to provide a recording medium that allows the computer to execute a call service method which can readily respond to an inquiry received through telephone, an electronic mail or a homepage efficiently in a versatile manner.

A computer program containing instructions which when executed on a computer causes the computer to perform the method according to the present invention is recorded on computer readable-recording medium. This computer

readable-recording medium may be a floppy disk or a CD-ROM.  
Alternately the program may be stored at a server and the  
program may be downloaded when required. Otherwise, the  
program may be executed while it is at the server, i.e. without  
5 downloading from the server.

Although the invention has been described with respect  
to a specific embodiment for a complete and clear disclosure,  
the appended claims are not to be thus limited but are to  
be construed as embodying all modifications and alternative  
10 constructions that may occur to one skilled in the art which  
fairly fall within the basic teaching herein set forth.